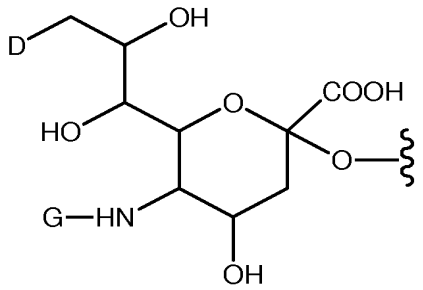
AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application.

1. (Currently Amended) A Granulocyte Colony Stimulating Factor peptide comprising a granulocyte-colony stimulating factor peptide and the moiety:

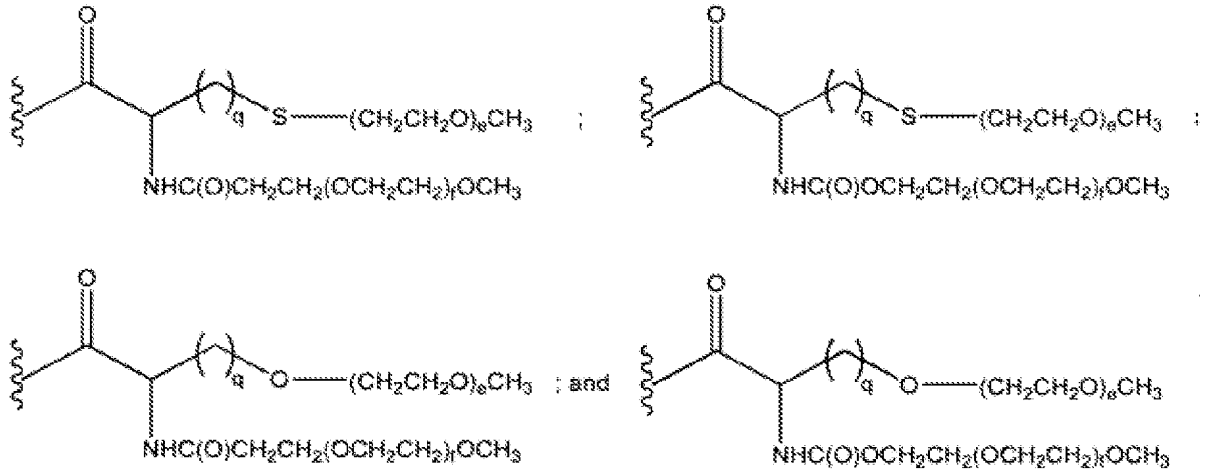


wherein

D is ~~a member selected from~~ -OH ~~and~~ or R^1-L-HN-;

G is ~~a member selected from~~ R^1-L- ~~and~~ or -C(O)(C_1-C_6)alkyl;

R^1 is a moiety comprising ~~a member selected a moiety comprising a straight-chain or branched poly(ethylene glycol) residue~~ a member selected from the group consisting of:



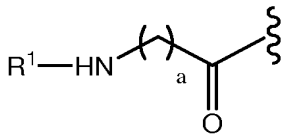
wherein e and f are integers independently selected from 1 to 2500; and q is an integer from 0 to 20; and

L is a linker ~~which is a member~~ selected from the group consisting of a bond, substituted ~~or~~ and unsubstituted ~~alkyl~~ alkyls and substituted or unsubstituted ~~heteroalkyl~~ heteroalkyls,

such that when D is ~~OH~~ –OH, G is R^1-L-, and when G is –C(O)(C_1-C_6)alkyl, D is R^1-L-NH-, and

wherein the poly(ethylene glycol) residue is covalently linked to said peptide via an intact glycosyl linking group.

2. (Original) The peptide according to claim 1, wherein L-R^1 has the formula:

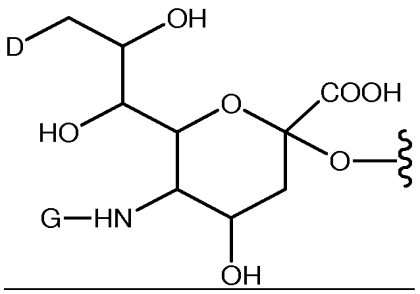


wherein

a is an integer from 0 to 20.

3. (Cancelled)

4. (Withdrawn – Currently Amended) ~~The peptide according to claim 1, wherein R1 has a structure that is a member selected from:~~ A Granulocyte Colony Stimulating Factor peptide comprising a granulocyte-colony stimulating factor peptide and the moiety:

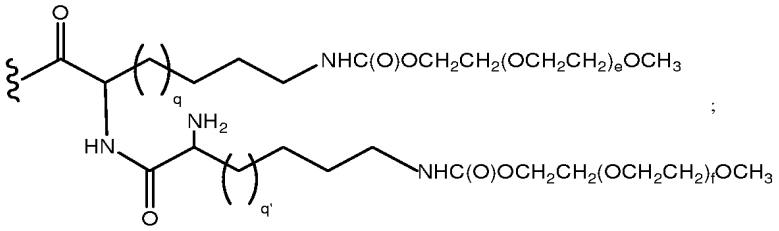


wherein

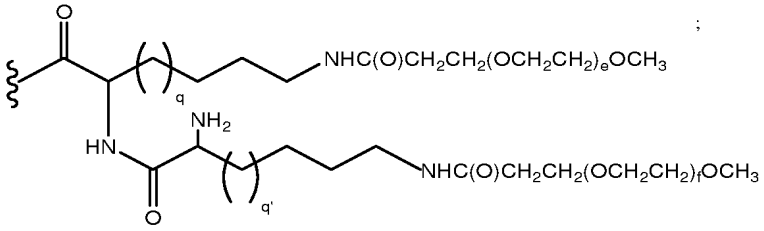
D is –OH or R^1-L-HN-;

G is R^1-L- or -C(O)(C_1-C_6)alkyl;

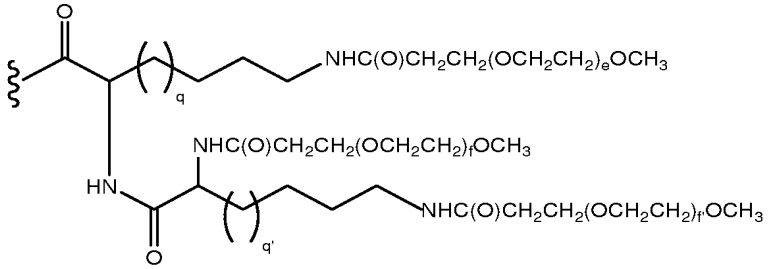
R^1 is a moiety comprising a member selected from the group consisting of:



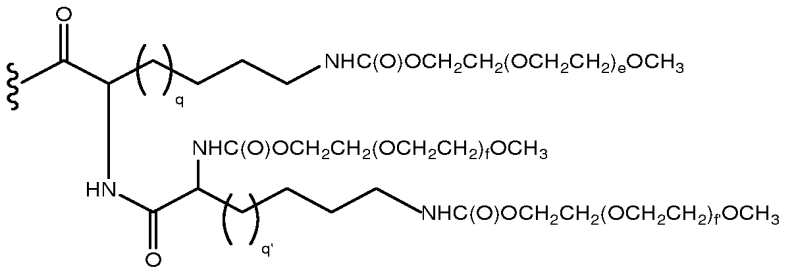
;



;



; and



wherein

e, f and f' are integers independently selected from 1 to 2500; and

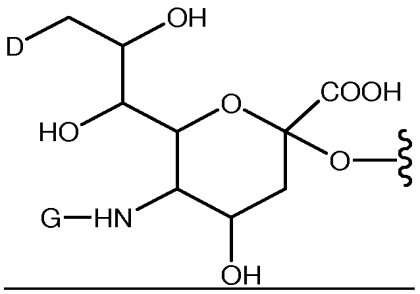
q and q' are integers independently selected from 1 to 20,

L is a linker selected from the group consisting of a bond, substituted and unsubstituted alkyls and substituted or unsubstituted heteroalkyls,

such that when D is –OH, G is R^1-L-, and when G is –C(O)(C_1-C_6)alkyl, D is R^1-L-NH-, and

wherein the poly(ethylene glycol) residue is covalently linked to said peptide via an intact glycosyl linking group.

5. (Withdrawn – Currently Amended) ~~The peptide according to claim 1, wherein R1 has a structure that is a member selected from:~~ A Granulocyte Colony Stimulating Factor peptide comprising a granulocyte-colony stimulating factor peptide and the moiety:

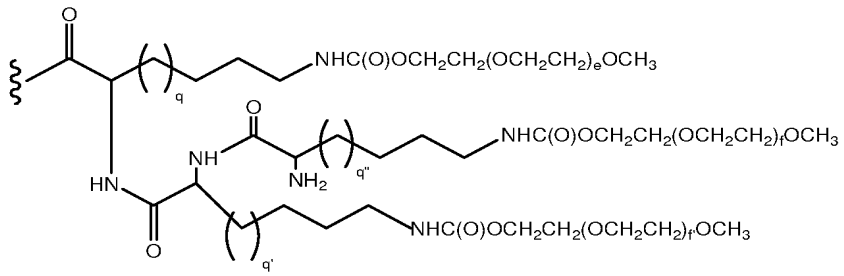


wherein

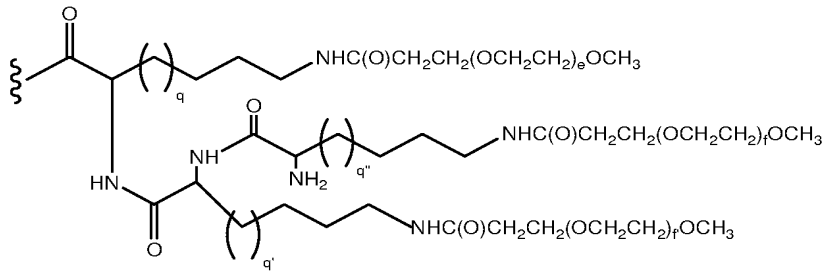
D is –OH or R^1-L-HN-;

G is R^1-L- or -C(O)(C_1-C_6)alkyl;

R^1 is a moiety comprising a member selected from the group consisting of:



; and



wherein

e, f and f' are integers independently selected from 1 to 2500; and

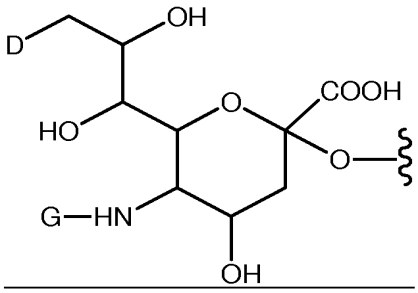
q, q' and q"are integers independently selected from 1 to 20,

L is a linker selected from the group consisting of a bond, substituted and unsubstituted alkyls and substituted or unsubstituted heteroalkyls,

such that when D is –OH, G is R^1-L-, and when G is –C(O)(C_1-C_6)alkyl, D is R^1-L-NH-, and

wherein the poly(ethylene glycol) residue is covalently linked to said peptide via an intact glycosyl linking group.

6. (Withdrawn – Currently Amended) ~~The peptide according to claim 1, wherein R1 has a structure that is a member selected from:~~ A Granulocyte Colony Stimulating Factor peptide comprising a granulocyte-colony stimulating factor peptide and the moiety:

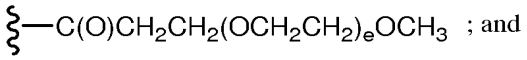


wherein

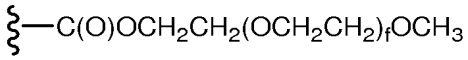
D is –OH or R^1-L-HN-;

G is R^1-L- or -C(O)(C_1-C_6)alkyl;

R^1 is a moiety comprising a member selected from the group consisting of:



; and



wherein

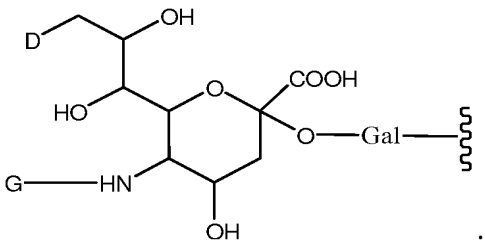
e and f are integers independently selected from 1 to 2500,

L is a linker selected from the group consisting of a bond, substituted and unsubstituted alkyls and substituted or unsubstituted heteroalkyls,

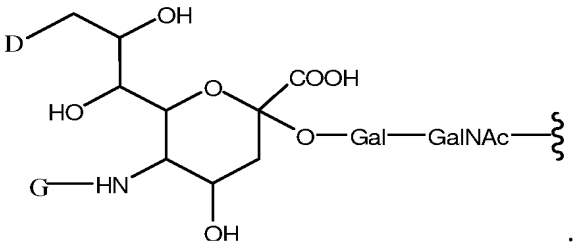
such that when D is –OH, G is R^1-L-, and when G is –C(O)(C_1-C_6)alkyl, D is R^1-L-NH-, and

wherein the poly(ethylene glycol) residue is covalently linked to said peptide via an intact glycosyl linking group.

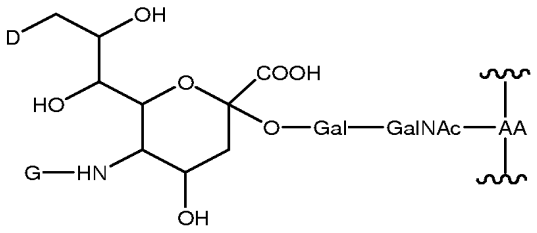
7. (Original) The G-CSF peptide according to claim 1, wherein said moiety has the formula:



8. (Withdrawn) The G-CSF peptide according to claim 1, wherein said moiety has the formula:



9. (Withdrawn) The G-CSF peptide according to claim 1, wherein said moiety has the formula:



wherein

AA is an amino acid residue of said peptide.

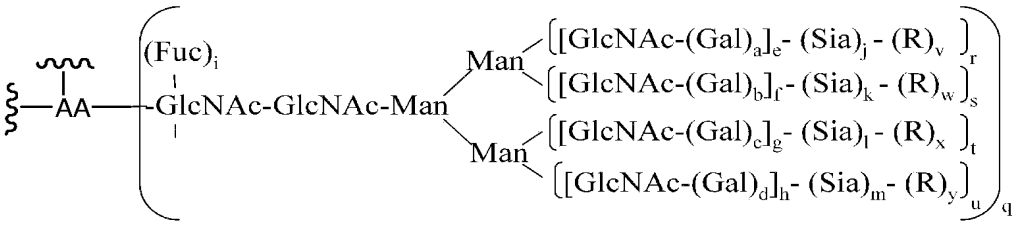
10. (Withdrawn) The G-CSF peptide according to claim 9, wherein said amino acid residue is a member selected from serine or threonine.

11. (Original) The G-CSF peptide according to claim 1, wherein said peptide has the amino acid sequence of SEQ. ID. NO:1.

12. (Original) The G-CSF peptide according to claim 11, wherein said amino acid residue is threonine at position 133 of SEQ. ID. NO:1.

13. (Original) The peptide according to claim 1, wherein said peptide has an amino acid sequence selected from SEQ. ID. NO:1 and SEQ ID NO:2.

14. (Withdrawn – Currently Amended) The G-CSF peptide according to claim 1, wherein said moiety has the formula:



wherein

a, b, c, d, i, r, s, t, and u are integers independently selected from 0 and 1;

q is 1;

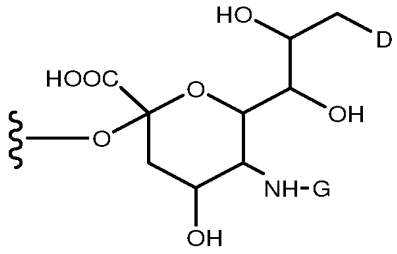
e, f, g, and h are members independently selected from the integers from 0 to 6;

j, k, l, and m are members independently selected from the integers from 0 and 100;

v, w, x, and y are independently selected from 0 and 1, and least one of v, w, x and y is 1;

AA is an amino acid residue of said G-CSF peptide;

Sia-(R) has the formula:

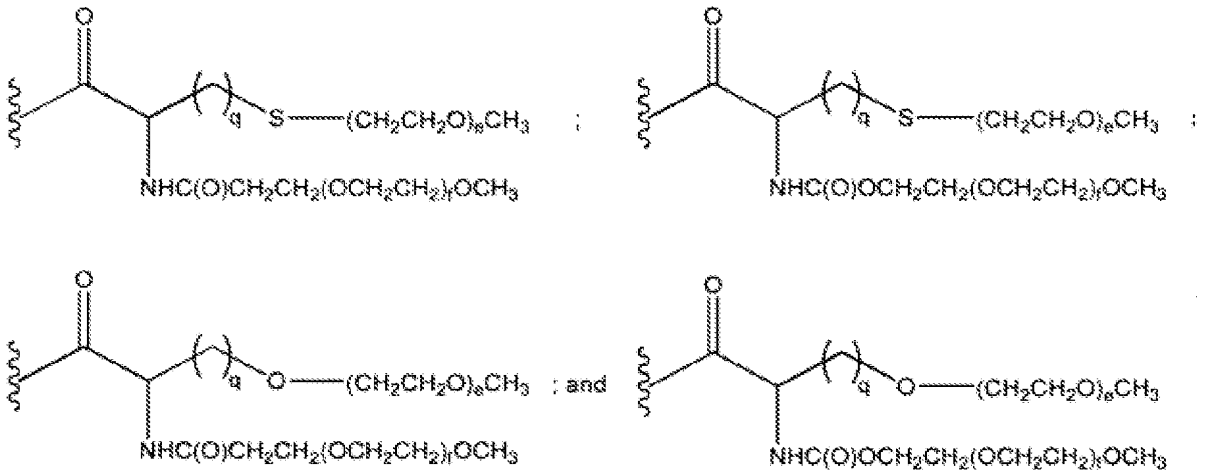


wherein

D is ~~a member selected from~~ -OH ~~and~~ or R^1-L-HN-;

G is ~~a member selected from~~ R^1-L- ~~and~~ or -C(O)(C_1-C_6)alkyl;

R^1 is a moiety comprising ~~a member selected a moiety comprising a straight-chain or branched poly(ethylene glycol) residue~~ a member selected from the group consisting of:



wherein e and f are integers independently selected from 1 to 2500; and q is an integer from 0 to 20; and

L is a linker ~~which is a member~~ selected from the group consisting of a bond, substituted ~~or~~ and unsubstituted ~~alkyl~~ alkyls and substituted or unsubstituted ~~heteroalkyl~~ heteroalkyls,

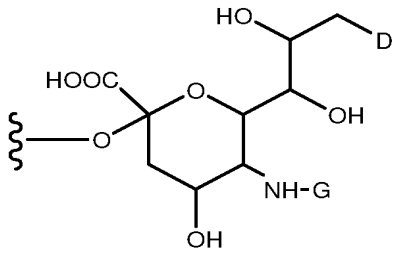
such that when D is ~~OH~~ –OH, G is R^1-L-, and when G is –C(O)(C_1-C_6)alkyl, D is R^1-L-NH-, and

wherein the poly(ethylene glycol) residue is covalently linked to said peptide via an intact glycosyl linking group.

15. (Withdrawn) The peptide according to claim 14, wherein said amino acid residue is an asparagine residue.

16. (Original) The peptide according to claim 1, wherein said peptide is a bioactive Granulocyte Colony Stimulating Factor peptide.

17. (Withdrawn – Currently Amended) A method of making a G-CSF peptide conjugate comprising a granulocyte-colony stimulating factor peptide and the moiety:

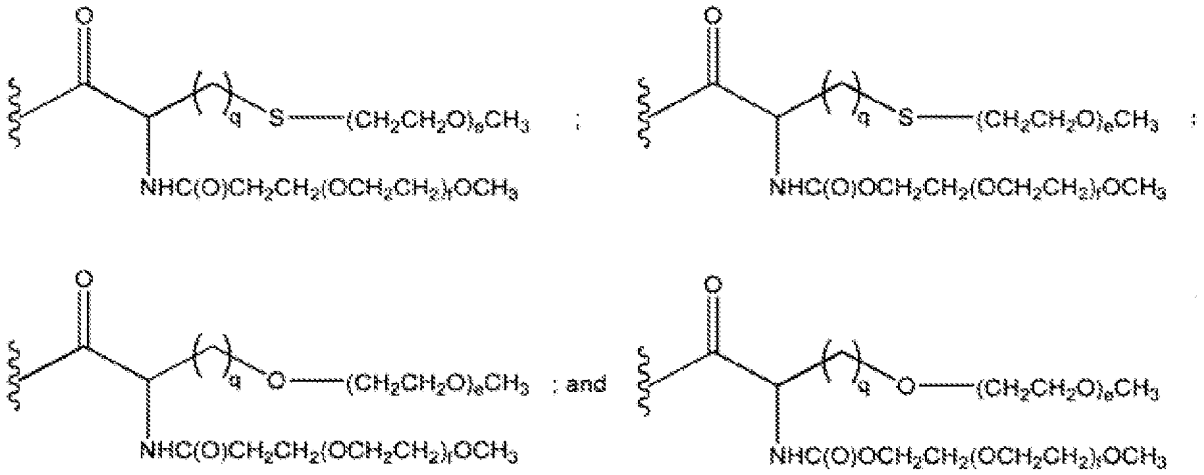


wherein

D is ~~a member selected from~~ -OH ~~and~~ or R^1-L-HN-;

G is ~~a member selected from~~ R^1-L- ~~and~~ or -C(O)(C_1-C_6)alkyl;

R^1 is a moiety comprising ~~a member selected a moiety comprising a straight chain or branched poly(ethylene glycol) residue~~ a member selected from the group consisting of:



wherein e and f are integers independently selected from 1 to 2500; and q is an integer from 0 to 20; and

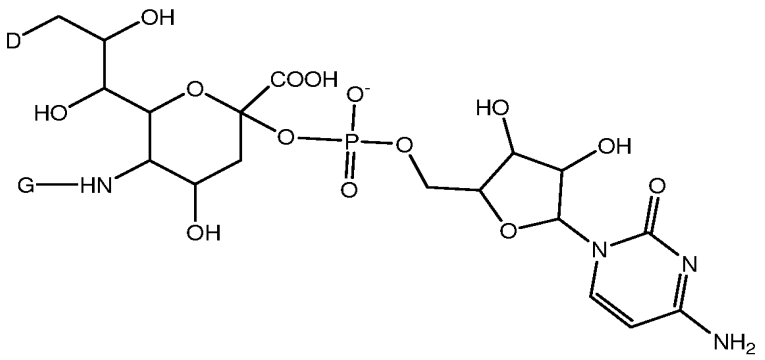
L is a linker ~~which is a member~~ selected from the group consisting of a bond, substituted ~~or~~ and unsubstituted ~~alkyl~~ alkyls and substituted or unsubstituted ~~heteroalkyl~~ heteroalkyls,

such that when D is ~~OH~~ –OH, G is R^1-L-, and when G is –C(O)(C_1-C_6)alkyl, D is R^1-L-NH-, and

wherein the poly(ethylene glycol) residue is covalently linked to said peptide via an intact glycosyl linking group

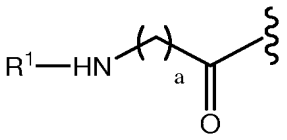
said method comprising:

(a) contacting a substrate G-CSF peptide with a PEG-sialic acid donor moiety having the formula:



and an enzyme that transfers said PEG-sialic acid onto an amino acid or glycosyl residue of said G-CSF peptide, under conditions ~~appropriate for~~ to effect the transfer.

18. (Withdrawn) The method according to claim 17, wherein L-R^1 has the formula:

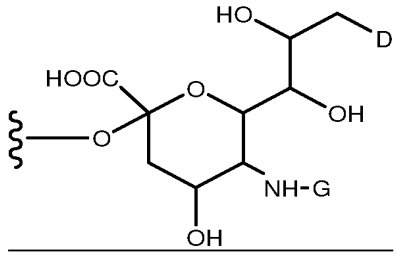


wherein

a is an integer from 0 to 20.

19. (Cancelled)

20. (Withdrawn – Currently Amended) ~~The method according to claim 17, wherein R1 has a structure that is a member selected from:~~ A method of making a G-CSF peptide conjugate comprising a granulocyte-colony stimulating factor peptide and the moiety:

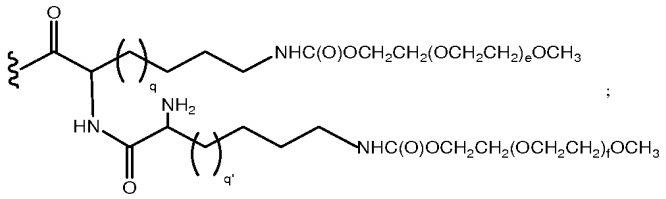


wherein

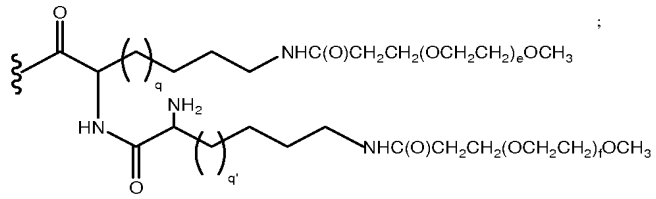
D is -OH or R^1-L-HN-;

G is R^1-L- or -C(O)(C_1-C_6)alkyl;

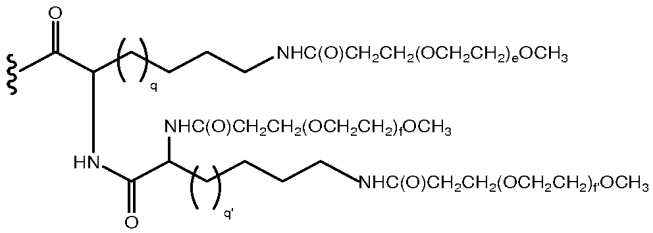
R^1 is a moiety comprising a member selected from the group consisting of:



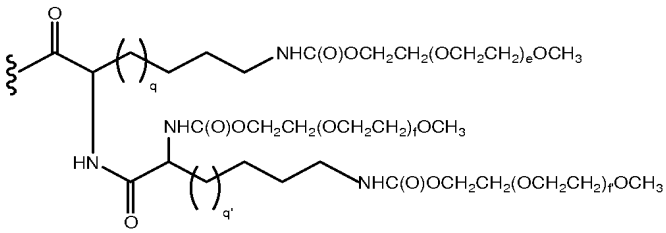
;



;



; and



wherein

e, f and f' are integers independently selected from 1 to 2500; and

q and q' are integers independently selected from 1 to 20,

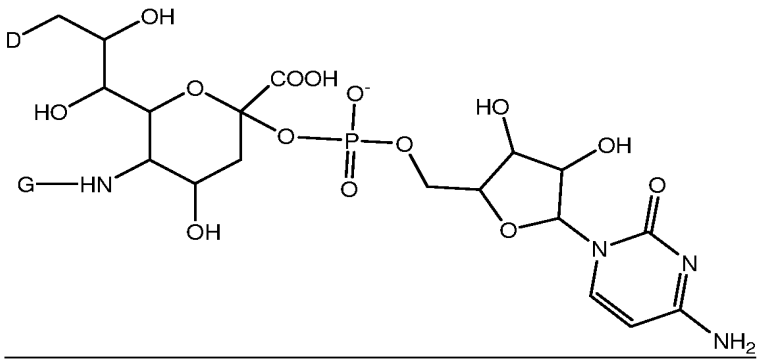
L is a linker selected from the group consisting of a bond, substituted and unsubstituted alkyls and substituted or unsubstituted heteroalkyls,

such that when D is –OH, G is R^1-L-, and when G is –C(O)(C_1-C_6)alkyl, D is R^1-L-NH-, and

wherein the poly(ethylene glycol) residue is covalently linked to said peptide via an intact glycosyl linking group,

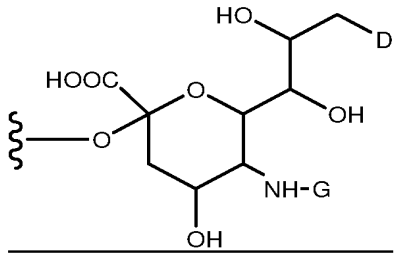
said method comprising:

(a) contacting a substrate G-CSF peptide with a PEG-sialic acid donor moiety having the formula:



and an enzyme that transfers said PEG-sialic acid onto an amino acid or glycosyl residue of said G-CSF peptide, under conditions to effect the transfer.

21. (Withdrawn – Currently Amended) ~~The method according to claim 17, wherein R1 has a structure that is a member selected from:~~ A method of making a G-CSF peptide conjugate comprising a granulocyte-colony stimulating factor peptide and the moiety:

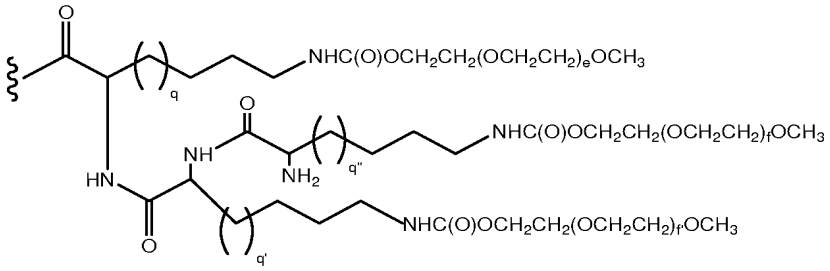


wherein

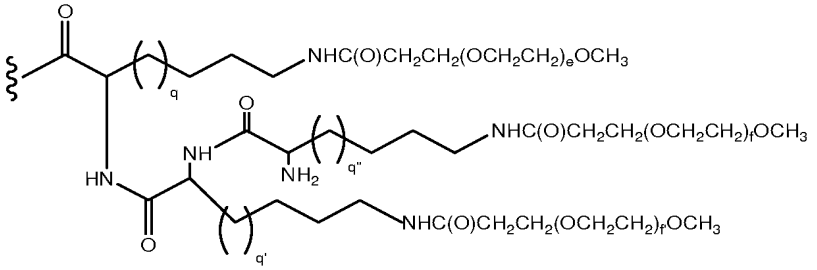
D is -OH or R^1-L-HN-;

G is -R^1-L- or -C(O)(C_1-C_6)alkyl;

R^1 is a moiety comprising a member selected from the group consisting of:



; and



wherein

e, f and f' are integers independently selected from 1 to 2500; and

q, q' and q"are integers independently selected from 1 to 20,

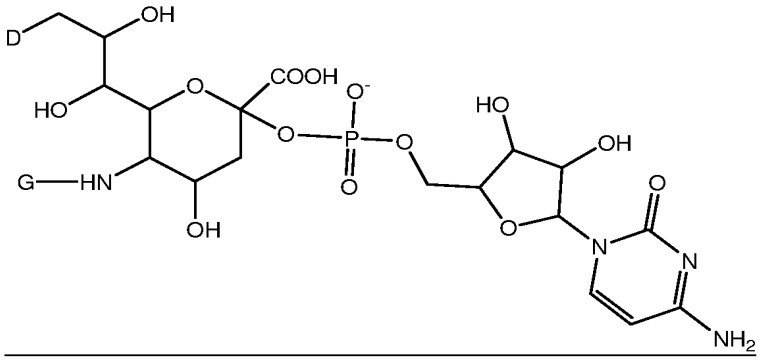
L is a linker selected from the group consisting of a bond, substituted and unsubstituted alkyls and substituted or unsubstituted heteroalkyls,

such that when D is –OH, G is R^1-L-, and when G is –C(O)(C_1-C_6)alkyl, D is R^1-L-NH-

wherein the poly(ethylene glycol) residue is covalently linked to said peptide via an intact glycosyl linking group

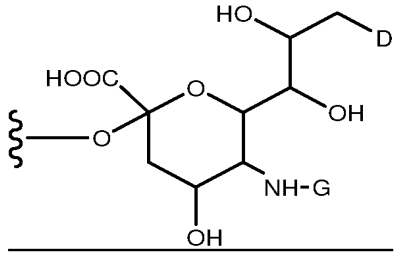
said method comprising:

(a) contacting a substrate G-CSF peptide with a PEG-sialic acid donor moiety having the formula:



and an enzyme that transfers said PEG-sialic acid onto an amino acid or glycosyl residue of said G-CSF peptide, under conditions to effect the transfer.

22. (Withdrawn – Currently Amended) ~~The method according to claim 17, wherein R1 has a structure that is a member selected from:~~ A method of making a G-CSF peptide conjugate comprising a granulocyte-colony stimulating factor peptide and the moiety:

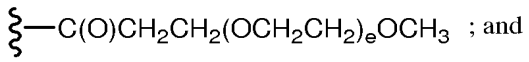


wherein

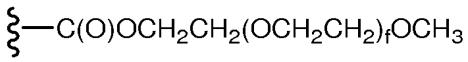
D is -OH or R^1-L-HN-;

G is -R^1-L- or -C(O)(C_1-C_6)alkyl;

R^1 is a moiety comprising a member selected from the group consisting of:



; and



wherein

e and f are integers independently selected from 1 to 2500

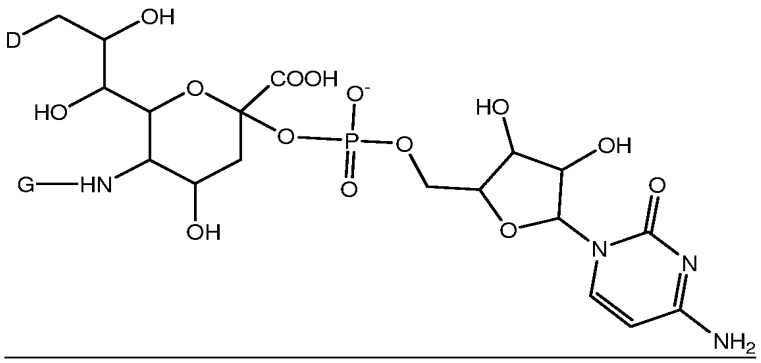
L is a linker selected from the group consisting of a bond, substituted and unsubstituted alkyls and substituted or unsubstituted heteroalkyls,

such that when D is –OH, G is R^1-L-, and when G is –C(O)(C_1-C_6)alkyl, D is R^1-L-NH-, and

wherein the poly(ethylene glycol) residue is covalently linked to said peptide via an intact glycosyl linking group

said method comprising:

(a) contacting a substrate G-CSF peptide with a PEG-sialic acid donor moiety having the formula:



and an enzyme that transfers said PEG-sialic acid onto an amino acid or glycosyl residue of said G-CSF peptide, under conditions to effect the transfer.

23. (Withdrawn) The method of claim 17, further comprising, prior to step (a):

(b) expressing said substrate Granulocyte Colony Stimulating Factor peptide in a suitable host.

24. (Withdrawn) The method of claim 17, wherein said host is selected from an insect cell and a mammalian cell.

25. (Withdrawn) A method of stimulating inflammatory leukocyte production in a mammal, said method comprising administering to said mammal a peptide according to claim 1.

26. (Withdrawn) A method of treating infection in a subject in need thereof, said method comprising the step of administering to the subject an amount of a peptide according to claim 1, effective to ameliorate said condition in said subject.

27. (Original) A pharmaceutical formulation comprising the Granulocyte Colony Stimulating Factor peptide according to claim 1, and a pharmaceutically acceptable carrier.

28. (Withdrawn) A method of refolding an insoluble recombinant granulocyte colony stimulating factor (GCSF) protein, the method comprising the steps of:

(a) solubilizing the GCSF protein; and

(b) contacting the soluble GCSF protein with a buffer comprising a redox couple to refold the GCSF protein, wherein the refolded GCSF protein is biologically active.